VOLUME XIV, ISSUE 1

THE

OZARK OBSERVER

NATIONAL WEATHER SERVICE
SPRINGFIELD MO

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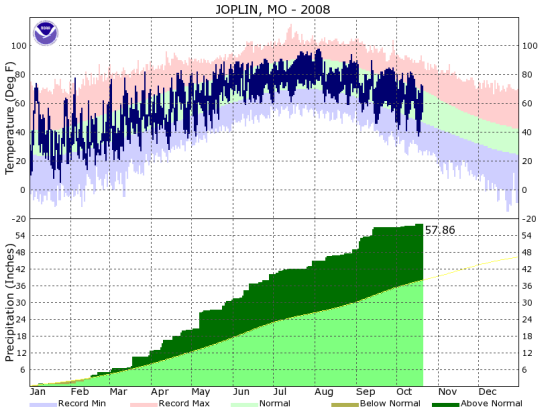
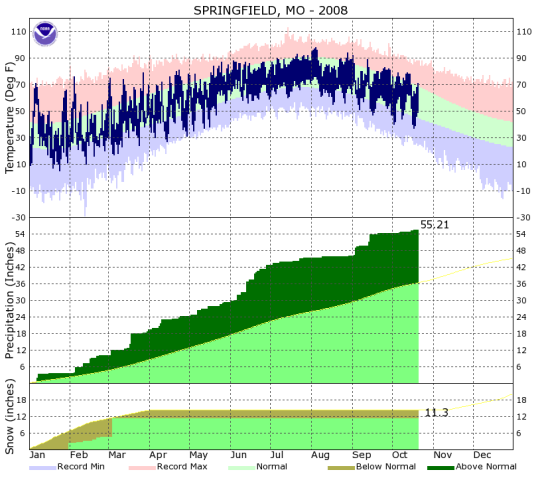
A YEAR OF PRECIPITATION EXTREMES

Ask anyone from southwest Missouri or extreme southeast Kansas about this year's weather, and they will likely tell you that it has been crazy! It is true. In particular, the precipitation patterns of the past nine months have been extraordinary. In Springfield for instance, three of these months (Feb, Mar, and June) set new records for total precipitation. That is the most precipitation in more than 100 years! In fact, from January through June, the Springfield-Branson regional airport received 191% of its average rainfall for the same time period. This is evident on the chart at right in the areas for which the dark green coloration (amount above average) is almost twice as much as the light green (average).

Despite the extreme rainfall amounts early in the year, July and August actually experienced less than half of the normal rainfall, and conditions actually became abnormally dry in late August. The wet pattern kicked back in during September with the approach of tropical moisture and total rainfall was 169% of normal. Time can only tell how long this rainfall roller coaster ride will continue.





NEW WINTER WEATHER PRODUCTS TAKE EFFECT

The winter of 2008-2009 will be a time of change and simplification for the National Weather Service winter weather products. In past years, there were as many as 13 different winter weather advisory and warning products. That number has now been trimmed down to seven, with the Winter Storm Warning and Winter Weather Advisory now overtaking former products such as the Sleet Advisory, Heavy Snow Warning, as well as the Snow and Blowing Snow Advisory. However, no specificity will be lost in these "all-encompassing" products as specific weather threats will be detailed within the warning text and headlines. "The Winter Storm Warning and Winter Weather Advisory have always been the most common winter weather products, mainly because most winter storms have multiple precipitation types," said forecaster Doug Cramer. "This way, it will be easier for all NWS offices to collaborate together on products, issuing similar products and adding emphasis in the final details."

TROPICAL STORMS IN THE OZARKS???

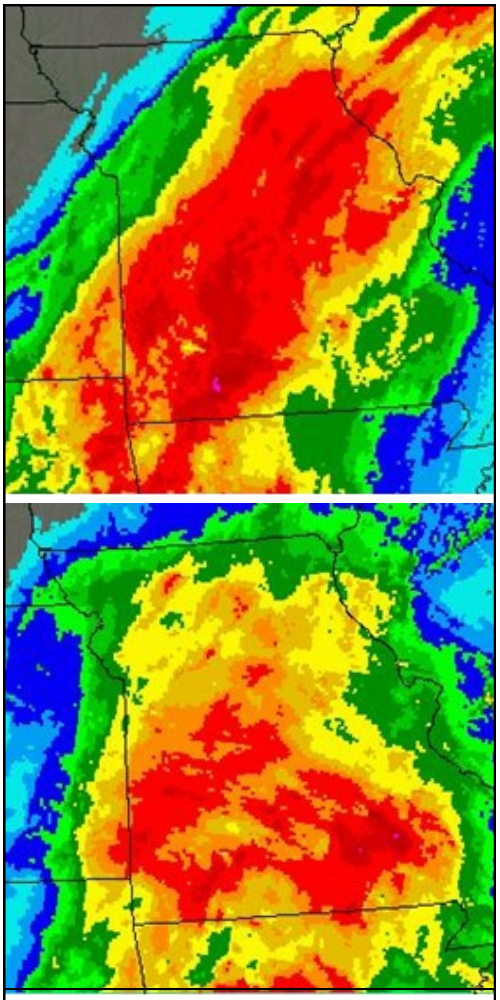
IKE AND GUSTAV BRING WIND AND HEAVY RAIN

Over the past 100 years, September has been the climatological peak of the Atlantic hurricane season. September of 2008 has proven to be no exception in the hurricane department with six named storms developing across portions of the Atlantic Ocean, Caribbean Sea, and Gulf of Mexico. While this season has experienced "above normal" hurricane activity in these regions, it has not been particularly abnormal. However, what has been out of the ordinary is the fact that two tropical systems made it all the way into extreme southeast Kansas and southern Missouri before dissipating. According to hurricane records, it has been more than 20 years since two or more named tropical systems have crossed the Ozarks in the same year.

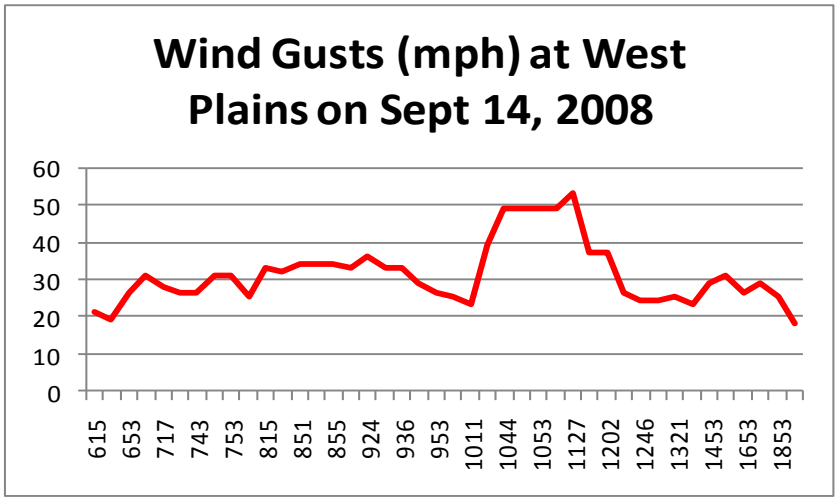
Hurricane Gustav became a powerful category 4 hurricane at one point over the Gulf of Mexico, but weakened to a category 2 hurricane as it made landfall over Louisiana on September 1. Gustav weakened to a tropical depression as it reached the Ozarks and interacted with a cold front to produce one tornado and significant rainfall across much of the area. Flooding was observed across much of southern Missouri and extreme southeast Kansas as a result. Thankfully, a dry August prior to Gustav helped mitigate the potential flooding risk that can result from six inches of rain on saturated soils.

Hurricane Ike was also a category 4 hurricane during its life span. Similarly to Gustav, Ike also weakened to a category 2 hurricane before making landfall on September 13. However, Ike was an abnormally large storm, and made landfall on the low coastal plains of Galveston Bay, causing significant wind and storm surge damage along the coast and into the Houston area. Ike then turned toward the north, weakening to a tropical storm over northeast Texas. Typical tropical systems, such as Gustav, weaken into tropical depressions or dissipate completely before making it across the Boston Mountains. However, Ike managed to remain organized as a tropical storm all the way into south central Missouri. This is evident in the wind gust measurement below taken from the Automated Surface Observation Station at West Plains. Ike caused widespread wind damage with uprooted trees and damaged power lines, and reports of winds up to 65 mph near the center of the circulation. Significant flooding was also reported as up to six inches of rain fell on ground already saturated from Gustav's heavy rainfall.

"IKE CAUSED WIDESPREAD WIND DAMAGE WITH UPROOTED TREES AND DAMAGED POWER LINES, AND REPORTS OF WINDS UP TO 65 MPH"



Top: The remnants of Hurricane Ike dropped as much as six inches of rain over much of the area. Bottom: The remnants of Hurricane Gustav also provided one to six inches of rain across the same region.



POMME DE TERRE COOP OBSERVER RECEIVES AWARD

By Larry Dooley

On October 15, 2008, Warning Coordination Meteorologist Steve Runnels presented a 50 year Honored Institution Award to the US Army Corp of Engineers at Pomme De Terre Dam.

The National Weather Service Cooperative Observer Program is truly the Nation's weather and climate observing network of, by and for the people. More than 11,000 volunteers take observations, and the data are truly representative of where people live, work and play.

The COOP station at Pomme De Terre Dam was opened on March 1, 1957 as Mr. Asa Losure took observations for the Corp of Engineers on his farm, which is now part of the dam. The US Corp of Engineers project office opened in June of 1961 and took over the observations. Observations have been taken from this location since the office opened. The station is essentially the same as when it opened with only a few minor equipment changes. The weighing rain gage has been modified over the years but still looks nearly identical.

The observations taken through the years are in constant use in many ways. They are, and will continue to be, important in helping solve problems concerning the conduct of our industry, commerce, and agriculture.

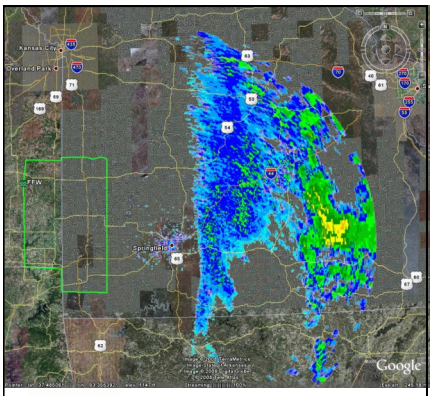
NWS Warning Coordination Meteorologist, Steve Runnels, presents an award to the Pomme De Terre Corps of Engineers

FREE WEATHER INFORMATION FOR YOUR PC

A Geographic Information System (GIS) is a relatively new concept in mapping technology that has seen significant advances in recent years. GIS products are those that can be displayed on various mapping software packages such as Google Earth, ArcView, NASA World Wind, and others.

National Weather Service products are now being incorporated into geospatial formats which can be displayed by these mapping programs. Virtually any kind of meteorological data can now be viewed in map form on your very own computer.

Many of these programs will also update the data whenever new data becomes available. NWS warnings are typically updated every minute, and the information comes directly from the NWS. For instance, during a severe weather event, it may be a good idea to open up a display of Doppler radar and severe weather warnings, which will automatically update every minute in order to provide you with the latest information. The actual warning text is also available simply by clicking on the displayed warning polygon. To obtain NWS GIS files, visit http://www.weather.gov/gis/

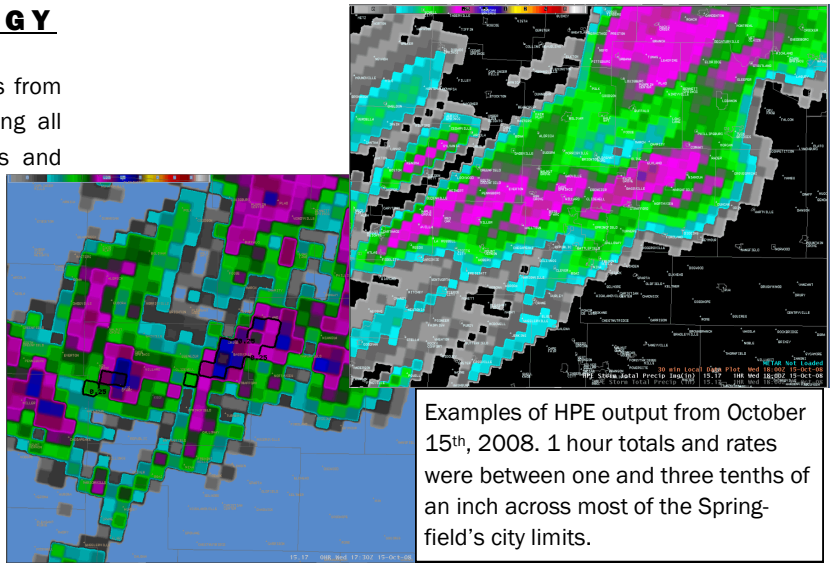


An example of Doppler radar and flash flood warnings displayed in Google Earth.

TECHNOLOGY CORNER: HYDROLOGY

By Jim Taggart

A new forecast tool is being implemented throughout the NWS to produce analyses and short-range forecast for flash flood prediction operations. This tool, the High-resolution Precipitation Estimator (HPE), uses a 1 km grid resolution, and a 5-minute update cycle with minimal time lag. The functionality produces analyses of rain rate, total rainfall, and future rainfall forecasts from multiple radars, covering all of the Missouri Ozarks and far southeast Kansas. HPE incorporates a better estimate of actual rainfall than sources such as radar estimates alone can provide, thus helping in the issuance of more accurate flood and flash flood warnings.



Examples of HPE output from October 15th, 2008. 1 hour totals and rates were between one and three tenths of an inch across most of the Springfield's city limits.

JUNIOR OBSERVER PAGE

Word Find!

Search for these weather words:

- Snow
- Frost
- Blizzard
- Flurry
- Freezing
- Chilly
- Sleet
- Ice

X	T	I	B	A	I	L	G
F	E	D	C	O	L	N	D
W	F	R	N	E	I	F	V
B	L	I	Z	Z	A	R	D
N	U	U	E	S	N	O	W
P	R	E	F	O	L	S	O
Y	R	H	Q	N	D	T	R
F	Y	L	L	I	H	C	Y

Make A Snowflake!

What you will need:

- 1 (or several) pieces of paper
- Scissors
- Crayons, Markers, or Decorations
- String
- Tape

Steps:

1. Draw or color all over both sides of your piece of paper (use fun colors you would like to see on your snowflake)
2. Cut a large circle out of the piece of paper. Be sure to include most or all of your coloring!
3. Fold the circle in half.
4. Fold it in half again, and then again, and even again if you can!
5. Cut small triangles, squares, or other shapes out of the edges of your folded up piece of paper. Cut anywhere, but be sure not to cut an entire side off.
6. Unfold the paper and look at your beautiful snowflake!
7. Use the string and tape to hang the snowflake from the ceiling, and then make more. You can have a whole snowstorm!!!

Did You Know???

The coldest temperature ever recorded in the U.S. was -79.8 degrees Fahrenheit at Prospect Creek Camp in Northern Alaska on January 23, 1971.

Mt. Shasta ski bowl in California once received 189 inches of snow from a single storm!

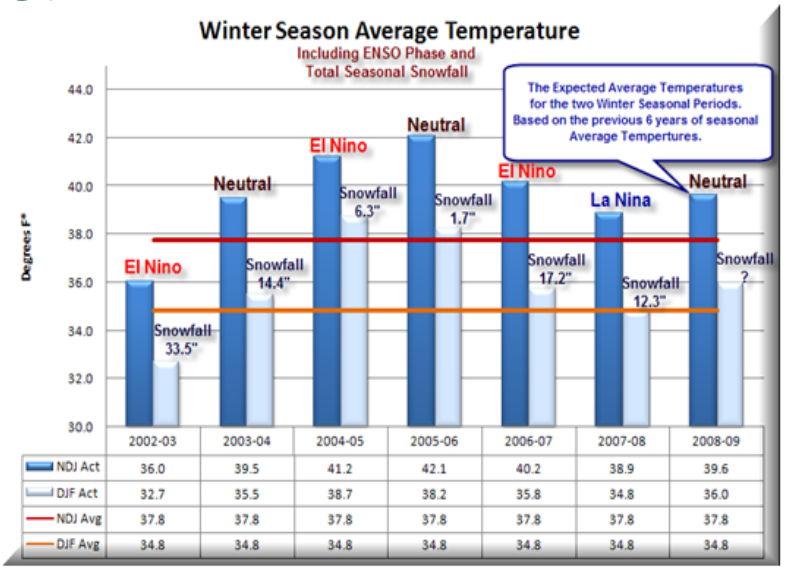
The greatest 24 hour snowfall in the U.S. was 75.8 inches at Silver Lake, CO on April 14-15, 1921.

93.5 feet of snow fell in one winter at the Rainier Paradise Ranger Station in Washington.

WINTER OUTLOOK

By Gene Hatch

As winter approaches, the most frequently asked questions of a meteorologist are, "How much snow can we expect this winter?", "Is this going to be a cold winter?" and "What's the forecast for the winter season?" While long range outlooks and forecasts provide the National Weather Service with a general trend of what will likely happen, what actually occurs from one location to the next may be very different. When long range forecasts for periods far into the future are done, much of what is used to produce the forecast is based on climatology, past trends, and long range computer models. Knowing this, the forecast from the Climate Prediction Center (CPC) is indicating that much of the central United States has an increased chance of seeing above normal average temperatures for the November through January (NDJ) and December through February (DJF) periods. The precipitation forecast for the same NDJ & DJF periods indicates, near normal to slightly above normal chances, through the winter season.



	2002-03	2003-04	2004-05	2005-06	2006-07	2007-08	2008-09
NDJ Act	36.0	39.5	41.2	42.1	40.2	38.9	39.6
DJF Act	32.7	35.5	38.7	38.2	35.8	34.8	36.0
NDJ Avg	37.8	37.8	37.8	37.8	37.8	37.8	37.8
DJF Avg	34.8	34.8	34.8	34.8	34.8	34.8	34.8

WINTER WEATHER SAFETY

Everyone should have a winter weather preparedness kit in their car and home. Some useful items to keep in this kit include blankets, a mobile phone, extra batteries, a flashlight, first aid kit, non-perishable food, waterproof matches and candles, a can for melting snow for water, extra clothing, a shovel, and a tow rope. Also make sure to keep the gas tank near full and inform someone of your intended route when traveling during the winter months.

If caught in a storm while traveling, stay calm and remain in your vehicle. Run the motor about 10 minutes every hour for heat, but make sure the exhaust pipe is not blocked by snow, and crack a window for fresh air. Use bright colored cloth or a sign to indicate that you are in need of help. Also try to exercise frequently to keep blood circulating, and keep you warm.

In most cases, the worst thing a stranded motorist can do is abandon their car in the middle of a snow storm. It is simply too easy to become disoriented and lost.

If caught outside in a winter storm, try to stay dry and cover all exposed areas of your body. Build a shelter to protect yourself from the wind and hold in some body heat. Build a fire if at all possible. Eating snow lowers your body temperature, bringing you closer to hypothermia. If at all possible, try to melt snow for water.

The safest thing one can do is to be prepared. Have your preparedness kit ready, and monitor NWS forecasts for the possibility of severe winter weather.

NWS SPRINGFIELD WINTER WEATHER PRODUCTS

Winter Storm Warning: A combination of any of the winter weather types which meet the criteria listed below, or a combination of several types of severe winter weather..

* 6 or more inches of snowfall in a 24 hour period
* 1/2 inch or more of sleet

Ice Storm Warning: Ice accumulates to a thickness of 1/4 inch or more.

Blizzard Warning: Visibility below 1/4 mile due to falling or blowing snow, with wind speeds in excess of 35 mph.

Winter Weather Advisory: A combination of any of the winter weather types which meet at least 2 of the criteria listed below.

* 3 to 5 inches of snowfall
* 25-34 mph winds blowing snow with less than 1/4 mile visibility
* Sleet accumulating less than 1/2 inch deep

Freezing Rain Advisory: Ice accumulations of less than 1/4 inch.

Wind Chill Warning: Wind chill values of –25 F or colder.

VISIT WWW.WEATHER.GOV/SGF FOR ALL OF OUR WINTER WEATHER PRODUCTS

Keep this page for your Winter Weather Reference!